

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A substantially flexible bag for use in centrifugal processing comprising:
 - a substantially circular enclosure including a first side and a second side radially connected to the first side along an outer edge, the first and second sides defining an interior surface therebetween, the first and second sides each having a respective central opening for housing a central hub; and
 - a first mating portion positioned adjacent to the central opening, along the interior surface of the first side extending in a direction perpendicular to the interior surface, and, in cross-section, including at least one of a raised or recessed shape with respect to the interior surface, the first mating portion integrally formed for mating in a cooperative arrangement with a corresponding mating portion of the central hub, and the raised or recessed shape of the first mating portion opposing an interior surface of the second side.
2. (Previously Presented) The bag according to claim 1, wherein the first mating portion comprises an integrally molded radial barrier extending away from the interior surface adjacent to the central opening.
3. (Previously Presented) The bag according to claim 1, wherein the first mating portion comprises one or more recesses formed adjacent the opening extending in toward the interior surface adjacent to the central opening and wherein the corresponding mating portion of the central hub is received by the one or more recesses.
4. (Previously Presented) The bag according to claim 1, wherein the first mating portion comprises one or more raised areas formed adjacent the opening and wherein the corresponding mating portion of the central hub receives the one or more raised areas.

5. (Previously Presented) The bag according to claim 2, wherein the integrally molded radial barrier comprises a solid circumferential ring of raised material.
6. (Previously Presented) The bag according to claim 2, wherein the integrally molded radial barrier comprises a circumferential recess.
7. (Cancelled)
8. (Previously Presented) The bag according to claim 1, wherein each of the first and second sides includes a respective mating portion positioned adjacent to the central opening along the interior surface of each respective side, each respective mating portion extending in a direction perpendicular to the respective interior surface and integrally formed for mating in a cooperative arrangement with a respective corresponding mating portion of a respective side of the central hub.
9. (Previously Presented) The bag according to claim 8, wherein each mating portion comprises one or more recesses extending in toward the interior surface and formed adjacent to the respective opening and wherein the respective corresponding mating portion of the respective side of the central hub is received by the one or more recesses.
10. (Previously Presented) The bag according to claim 8, wherein each mating portion comprises one or more raised areas extending away from the interior surface and formed adjacent to the respective opening and wherein a respective corresponding mating portion of the respective side of the central hub receives the one or more raised areas.
11. (Previously Presented) The bag according to claim 1, wherein the bag is usable in a centrifugal processor as either or both of a processing and/or expresser bag.

12. Cancelled.

13. (Currently Amended) A substantially flexible bag for use in centrifugal processing comprising:

a substantially circular enclosure including a first side and a second side radially connected to the first side along an outer edge, the first and second sides defining an interior surface therebetween, the first and second sides each having a respective central opening for housing a central hub;

a first mating portion positioned adjacent to the central opening, along the interior surface of the first side extending in a direction perpendicular to the interior surface, in cross-section, including at least one of a raised or recessed shape with respect to the interior surface, and the first mating portion opposing an interior surface of the second side; and

a hub having a mating portion corresponding to the first mating portion, wherein the first mating portion is integrally formed for mating in a cooperative arrangement with the mating portion of the hub.

14. (Previously Presented) The bag according to claim 13, wherein the first mating portion comprises an integrally molded radial barrier extending away from the interior surface adjacent to the central opening.

15. (Previously Presented) The bag according to claim 13, wherein the first mating portion comprises one or more recesses formed adjacent to the opening extending in toward the interior surface adjacent to the central opening and wherein the corresponding mating portion of the hub is received by the one or more recesses.

16. (Previously Presented) The bag according to claim 13, wherein the first mating portion comprises one or more raised areas formed adjacent to the opening and wherein the corresponding mating portion of the hub receives the one or more raised areas.
17. (Previously Presented) The bag according to claim 14, wherein the integrally molded radial barrier comprises a solid circumferential ring of raised material.
18. (Previously Presented) The bag according to claim 14, wherein the integrally molded radial barrier comprises a circumferential recess.
19. (Cancelled)
20. (Previously Presented) The bag according to claim 13, wherein each of the first and second sides includes a respective mating portion positioned adjacent to the central opening along the interior surface of each respective side, each respective mating portion extending in a direction perpendicular to the respective interior surface and integrally formed for mating in a cooperative arrangement with a respective corresponding mating portion of a respective side of the hub.
21. (Previously Presented) The bag according to claim 20, wherein each mating portion comprises one or more recesses extending in toward the interior surface and formed adjacent to the respective opening and wherein the respective corresponding mating portion of the respective side of the hub is received by the one or more recesses.
22. (Previously Presented) The bag according to claim 20, wherein each mating portion comprises one or more raised areas extending away from the interior surface and formed adjacent to the a respective opening and wherein the respective corresponding mating portion of the respective side of the hub receives the one or more raised areas.

23. (Previously Presented) The bag according to claim 13, further comprising at least one weld ring having a central opening for receiving a first side of the central hub and a surface positioned adjacent the first side of the bag proximate the opening of the first side.

24. (Currently Amended) A centrifuge comprising:

one or more substantially flexible bags for housing a material to be separated, wherein each bag comprises:

a substantially circular enclosure including a first side and a second side radially connected to the first side along an outer edge, the first and second sides defining an interior surface therebetween, the first and second sides each having a respective central opening for housing a central hub;

a first mating portion positioned adjacent to the central opening, along the interior surface of the first side, extending in a direction perpendicular to the interior surface, in cross-section, including at least one of a raised or recessed shape with respect to the interior surface, and the first mating portion opposing an interior surface of the second side; and

one or more corresponding hubs, wherein each hub includes a respective mating portion corresponding to the first mating portion of a respective bag, wherein the first mating portion is integrally formed for mating in a cooperative arrangement with the corresponding mating portion of a respective hub.

25. (Previously Presented) The centrifuge according to claim 24, wherein the first mating portion comprises an integrally molded radial barrier extending away from the interior surface adjacent to the central opening.

26. (Previously Presented) The centrifuge according to claim 24, wherein the first mating portion comprises one or more recesses formed adjacent to the opening extending in toward the interior surface adjacent to the central opening and wherein the corresponding mating portion of the respective hub is received by the one or more recesses.
27. (Previously Presented) The centrifuge according to claim 24, wherein the first mating portion comprises one or more raised areas formed adjacent to the opening and wherein the corresponding mating portion of the respective hub receives the one or more raised areas.
28. (Previously Presented) The centrifuge according to claim 25, wherein the integrally molded radial barrier comprises a solid circumferential ring of raised material.
29. (Previously Presented) The centrifuge according to claim 25, wherein the integrally molded radial barrier comprises a circumferential recess.
30. (Currently Amended) A method of sealing a centrifuge bag to a hub, comprising:
providing a substantially flexible bag for use in centrifugal processing, wherein the bag comprises a substantially circular enclosure including a first side and a second side radially connected to the first side along an outer edge, the first and second sides defining an interior surface therebetween, the first and second sides each having a respective central opening for housing a central hub, wherein the central opening includes a first mating portion positioned adjacent to the central opening, along the interior surface of the first side extending in a direction perpendicular to the interior surface, in cross-section, including at least one of a raised or recessed shape with respect to the interior surface, and the first mating portion opposing an interior surface of the second side;

providing a hub having a mating portion corresponding to the first mating portion, wherein the first mating portion is integrally formed for mating in a cooperative arrangement with the corresponding mating portion of the hub;

placing the hub within the opening;

applying a layer of an adhesive material to at least one of the first mating portion and the corresponding mating portion of the hub; mating the first mating portion with the corresponding mating portion of the hub; and

curing the adhesive material.

31. (Cancelled)
32. (Original) The method according to claim 30, wherein curing comprising applying at least one of heat, ultraviolet light and/or pressure to the mating portions.
33. (Original) The method according to claim 30, further comprising applying a layer of the adhesive around all or a portion of the opening.
34. (Currently Amended) A method of sealing a centrifuge bag to a hub, comprising:
providing a substantially flexible bag for use in centrifugal processing, wherein the bag comprises a substantially circular enclosure including a first side and a second side radially connected to the first side along an outer edge, the first and second sides defining an interior surface therebetween, the first and second sides each having a respective central opening for housing a central hub, wherein the central opening includes a first mating portion positioned adjacent to the central opening, along the interior surface of the first side, extending in a direction perpendicular to the interior surface, in cross-section, including at least one of a raised or recessed shape with respect to the interior surface, and the first mating portion opposing an interior surface of the second side;

providing a hub having a mating portion corresponding to the first mating portion, wherein the first mating portion is integrally formed for mating in a cooperative arrangement with the corresponding mating portion of the hub;

placing the hub within the opening; and

mating the first mating portion with the second mating portion.

35. (Previously Presented) The method according to claim 34, wherein mating comprises welding the first mating portion to the corresponding mating portion of the hub.
36. (Original) The method according to claim 34, further comprising providing at least one weld ring having a central opening for receiving a first side of the hub and a surface positioned adjacent the first side of the bag proximate the opening of the first side.
37. (Original) The method according to claim 36, wherein mating comprises welding the weld ring to the hub.
38. (Previously Presented) The method according to claim 34, wherein mating comprises adhering the first mating portion to the mating portion of the hub using at least one of heat, solvent bonding, pressure, ultra-violet light and adhesive.
39. (Withdrawn) A hub for use with a centrifugal bag comprising one or more channels for directing fluids into and/or out of a centrifuge bag, and an integrally formed first mating portion for mating with a corresponding second mating portion of the centrifuge bag.
40. (Withdrawn) The hub according to claim 39, wherein the first mating portion comprises an integrally molded radial barrier.

41. (Withdrawn) The hub according to claim 39, wherein the first mating portion comprises one or more recesses and wherein the corresponding second mating portion is received by the one or more recesses.
42. (Withdrawn) The hub according to claim 39, wherein the first mating comprises one or more raised areas formed adjacent the opening and wherein the corresponding second mating portion receives the one or more raised areas.
43. (Withdrawn) The hub according to claim 40, wherein the radial barrier comprises a circumferential ring of raised material.
44. (Withdrawn) The hub according to claim 40, wherein the radial barrier comprises a circumferential recess.
45. (Withdrawn) The hub according to claim 39, wherein the hub includes a first side and a second side, and wherein each side include a respective first mating portion for mating with a respective second mating portion of each side of a centrifuge bag.
46. (Withdrawn) The hub according to claim 45, wherein the first mating portion comprises one or more recesses wherein a respective corresponding second mating portion is received by the one or more recesses.
47. (Withdrawn) The hub according to claim 45, wherein the first mating portion comprises one or more raised areas and wherein a respective corresponding second mating portion receives the one or more raised areas.

48. (Withdrawn) The hub according to claim 39, further comprising at least one weld ring having a central opening for receiving a first side of the hub and a surface positioned adjacent the second mating portion of the bag proximate the hub.
49. (Previously Presented) The bag according to claim 1, wherein a portion of an exterior surface of the first side adjacent to the first mating portion is flat.
50. (Previously presented) The bag according to claim 1, wherein the shape is a semi-circular half-section.
51. (Previously Presented) The bag according to claim 1, wherein the shape is selected from: a triangle, a square, an oval, and a rectangle.